

NWS FORM E-5

U.S. DEPARTMENT OF COMMERCE
NOAA, NATIONAL WEATHER SERVICE

HSA OFFICE:
Grand Rapids, MI

REPORT FOR (MONTH & YEAR):
May 2004

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

TO: NATIONAL WEATHER SERVICE (W/OS31)
HYDROMETEOROLOGICAL INFO CENTER
1325 EAST-WEST HIGHWAY, RM 13468
SILVER SPRING, MD 20910

DATE:
July 12, 2004

SIGNATURE:
Daniel G. Houser, MIC
Mark L. Walton, Service Hydrologist

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (WSOM E-41).



An **X** inside this box indicates that no flooding occurred within this Hydrologic Service Area.

Significant flooding occurred in the Grand Rapids Hydrologic Service Area (HSA) during the month of May. Our HSA had 20 forecast points reach minor flooding, 3 forecast points reach moderate flooding and 1 forecast point reach major flooding. Significant property damage occurred due to flooding during the month of May with over 100 county roads washed out or flooded, approximately 500 homes flooded, 3 dams damaged, 2 schools flooded, 1 state university, and 1 zoo. Several dams reached critical flows, and a Flood Watch was issued for the Hesperia Dam in Oceana County when emergency services expressed a concern that the dam might fail. Preliminary estimates of flood damages were in excess of 3 million dollars. Fortunately, no loss of life or dam failures occurred during these events. Governor Granholm issued a disaster declaration for nine counties in our HSA, and President Bush granted federal disaster relief for seven of the nine counties. The following counties in our HSA received Presidential disaster declarations: Barry, Ingham, Ionia, Jackson, Kent, Mecosta, and Ottawa Counties.

May Flooding

On Saturday, May 8th, our Hazardous Weather Outlook mentioned the threat of localized flooding due to heavy rainfall from thunderstorms and an Urban and Small Stream Flood Advisory was issued for Oceana County that morning. This nuisance flooding ended the afternoon of May 8th, with no reports of significant property damage. More heavy rainfall came into the area the evening of May 8th, and an Urban and Small Stream Flood Advisory was issued again for Oceana County and for Newaygo County. As reports came in of flooding, the Urban and Small Stream Flood Advisory was upgraded to an areal flood warning for Newaygo County late Saturday evening.

On Sunday, May 9th, the heavy rain shifted further South and East, and an Urban and Small Stream Flood Advisory was issued for Kent, Kalamazoo, Calhoun, Montcalm, and Clinton Counties. Only minor flooding of secondary roads occurred with this event. In close coordination with Oceana Emergency Services a Flood Watch was issued Sunday

afternoon for the White River below the Hesperia Dam in Oceana County. The dam was approaching capacity and about to be overtopped by the high water and there was concern that the dam might fail. The Flood Watch for the White river below the dam was cancelled later that evening when water levels receded and the dam held. The first river flood warning was issued Sunday evening for the White River near Whitehall. This was followed by another river flood warning for the Muskegon River at Newaygo.

On Monday, May 10th, a river flood warning was issued for the Maple River at Maple Rapids Monday morning. Localized heavy rains continue throughout the day and an Urban and Small Stream Flood Advisory was issued for Ingham, Eaton, and Barry Counties.

On Tuesday, May 11th, a river flood warning was issued for the Flat River near Smyrna. The Muskegon River at Newaygo fell below flood stage and the river flood warning was cancelled.

On Wednesday, May 12th and Thursday, May 13th, follow up flood statements were sent for the Maple River at Maple Rapids and the Flat River near Smyrna.

On Friday, May 14th, the Maple River at Maple Rapids and the Flat River near Smyrna fell below flood stage and the river flood warnings were cancelled. More rainfall fell over the Muskegon river basin Friday afternoon and in coordination with the dam operators at Croton Dam we issued a river flood warning for the Muskegon River at Newaygo Friday afternoon. The additional rainfall and releases from the Whites Bridge dam caused the Flat River near Smyrna to go back above flood stage and a river flood warning was reissued as a result. The additional rainfall also caused the Maple River at Maple Rapids to rise again and a river flood warning was issued Friday evening to cover this event.

On Saturday, May 15th, follow up flood statements were sent for the Maple River at Maple Rapids, the Flat River near Smyrna, and the Muskegon River at Newaygo.

On Sunday, May 16th, the river flood warnings for the Flat River near Smyrna, and the Muskegon River at Newaygo were cancelled.

On Monday, May 17th, the final river flood warning was cancelled for the Maple River at Maple Rapids.

On Wednesday, May 19th, our Hazardous Weather Outlook mentioned the threat of flooding through early next week.

On Thursday, May 20th, a Hydrologic Outlook was issued highlighting the potential for flooding across the HSA through Monday. The outlook highlighted the fact that river levels were still very high from flooding the previous week and the ground was very moist. An Urban and Small Stream Flood Advisory was issued for Ingham and Eaton Counties Thursday evening.

On Friday, May 21st, a Flood Watch was issued for our entire HSA through Saturday afternoon. As anticipated, a frontal boundary stalled over our HSA for several days which resulted in repeated bouts of thunderstorms and heavy rain over the area. An Urban and

Small Stream Flood Advisory was extended for Ingham and Eaton and issued for Jackson Counties early Friday morning. Friday afternoon and evening Urban and Small Stream Flood Advisories were issued for Clinton, Muskegon, Kent, Ionia, Allegan, Barry, Kalamazoo, Calhoun, Van Buren, and Ottawa Counties. River Flood Warnings were issued late Friday night for the Grand River at Lansing, Ionia, Lowell, Ada, Comstock Park, Grand Rapids, and Robinson Township; the Thornapple River near Hastings and Caledonia; the Looking Glass River near Eagle; the Maple River at Maple Rapids; the Flat River near Smyrna; the Rogue River at Rockford; the Pere Marquette River near Scottville; and the Muskegon River at Newaygo.

On Saturday, May 22nd, the Urban and Small Stream Flood Advisories was upgraded to a Flood Warning during the early morning hours for Muskegon, Kent, Ionia, Clinton, Ingham, Allegan, Eaton, Barry, Jackson, Kalamazoo, Calhoun, Van Buren, and Ottawa Counties. The heaviest rainfall fell on Saturday, with over two inches reported in most areas. Saturday afternoon a River Flood Statement was issued updating the forecast points included in the River Flood Warning issued Friday night. Saturday evening a River Flood Warning was issued for additional forecast points and for forecast points going to a higher flood category. This warning included the following additional forecast points: Grand River at Jackson, Eaton Rapids, and Portland; the Red Cedar River at East Lansing; the Kalamazoo River near Fennville; and the Portage River near Vicksburg; and the following forecast points that increased in flood category: the Grand River at Lansing (minor to moderate) and Comstock Park (moderate to major); and the Thornapple River near Hastings (minor to moderate). A River Flood Statement was also issued that night updating the forecast points going to flood.

On Sunday, May 23rd, River Flood Warning for the Muskegon River at Newaygo canceled early Sunday morning after river levels began falling before reaching flood stage. A Flood Warning was issued early Sunday morning for all of our Counties in our HSA (extended and added counties). River Flood Statements were issued in the morning and the evening for all forecast points covered by the River Flood Warning. Sunday afternoon a River Flood Statement was issued canceling River Flood Warnings for the Grand River at Jackson and Eaton Rapids; the Portage River near Vicksburg; and for the Pere Marquette River near Scottville. Based on dam release information from the Croton dam operators a River Flood Warning was reissued for the Muskegon River at Newaygo late Sunday evening. Also, that evening a River Flood Statement was issued for the Rogue River at Rockford canceling the River Flood Warning when the river crested below flood stage. Late that evening, as the areal flooding transitioned into river flooding, a Flood Statement was issued indicating the Flood Warning for all of our counties was allowed to expire at midnight.

On Monday, May 24th, River Flood Statements were issued for all forecast points covered by the River Flood Warning. A River Flood Warning was issued Monday afternoon for the following locations forecast to increase in flood category: the Muskegon River at Newaygo (minor to moderate); the Grand River at Ionia (minor to moderate); the Grand River at Lowell (minor to moderate); the Thornapple River near Hastings (moderate to major); and the Looking Glass River near Eagle (minor to moderate). Late Monday afternoon a River Flood Warning was issued for the Pere Marquette River near Scottville and the Chippewa River near Mt. Pleasant. Late Monday evening a River Flood Statement was issued for all forecast points covered by the River Flood Warning.

On Tuesday, May 25th, a River Flood Statement was issued to cancel River Flood Warnings for the Grand River at Portland; the Looking Glass River near Eagle; the Pere Marquette River near Scottville; and the Chippewa River at Mt. Pleasant. Late Tuesday morning and that evening a River Flood Statement was issued for all forecast points covered by the River Flood Warning. A River Flood Warning was reissued Tuesday evening due to an increase in flood category for the Grand River at Ada (minor to moderate).

On Wednesday, May 26th, a River Flood Warning was issued for the Kalamazoo River at Plainwell and a River Flood Statement was issued for all forecast points covered by the River Flood Warning. Wednesday evening a River Flood Statement was issued to cancel the River Flood Warnings for the Grand River at Lansing; and the Red Cedar River at East Lansing.

On Thursday, May 27th, morning and evening River Flood Statements were issued for all forecast points covered by the River Flood Warning. River Flood Statements were issued to cancel the River Flood Warning for the Flat River near Smyrna and the Grand River at Ionia.

On Friday, May 28th, River Flood Statements were issued to cancel the River Flood Warning for the Thornapple River near Caledonia, the Kalamazoo River at Plainwell and Fennville, the Grand River at Ada, and the Muskegon River at Newaygo. Morning and evening River Flood Statements were issued for all remaining forecast points covered by the River Flood Warning.

On Saturday, May 29th, River Flood Statements were issued to cancel the River Flood Warning for the Grand River at Lowell and Grand Rapids, and the Thornapple River near Hastings. Morning and evening River Flood Statements were issued for all remaining forecast points covered by the River Flood Warning.

On Sunday, May 30th, River Flood Statements were issued to cancel the River Flood Warning for the Maple River at Maple Rapids. Morning and evening River Flood Statements were issued for the two remaining forecast points covered by the River Flood Warning.

On Monday, May 31st, an Urban and Small Stream Flood Advisory was issued for Mason, Oceana, Muskegon, Allegan, and Ottawa Counties. The advisory was canceled later that day after the minor flooding on roads receded. Morning and evening River Flood Statements were issued for the two remaining forecast points covered by the River Flood Warning.

On Tuesday, June 1st, morning and evening River Flood Statements were issued for the two remaining forecast points covered by the River Flood Warning.

On Wednesday, June 2nd, a River Flood Statement was issued to cancel the River Flood Warning for the Grand River at Comstock Park. Morning and evening River Flood Statements were issued for the Grand River at Robinson Township.

On Thursday, June 3rd, the final River Flood Statement was issued to cancel the River Flood Warning for the Grand River at Robinson Township. A PNS was sent out on Thursday summarizing the flooding event and contained the following information:

PUBLIC INFORMATION STATEMENT
NATIONAL WEATHER SERVICE GRAND RAPIDS, MI
1043 AM EDT THU JUN 3 2004

...THE FLOOD OF MAY/JUNE 2004 IS OFFICIALLY OVER...

THE RIVER FORECAST POINT IN ROBINSON TOWNSHIP IN OTTAWA COUNTY FELL BELOW ITS FLOOD STAGE EARLY THIS MORNING. THE FOLLOWING IS A SUMMARY OF THE RIVER FLOODING ACROSS SOUTHWEST LOWER MICHIGAN DURING THIS EVENT.

LOCATION	RIVER	FLOOD STAGE FEET	CREST STAGE FEET	DATE/TIME	CATEGORY	HISTORICAL RANK OF CREST
LANSING	GRAND	11.0	12.87	5/24 12 AM	MINOR	13TH
EAST LANSING	RED CEDAR	7.0	7.48	5/24 2 PM	MINOR	34TH
PORTLAND	GRAND	12.0	12.66	5/24 12 PM	MINOR	9TH
EAGLE	LOOKING GLASS	6.0	7.42	5/24 8 AM	MINOR	8TH
MAPLE RAPIDS	MAPLE	9.0	10.42	5/24 10 AM	MINOR	5TH
IONIA	GRAND	21.0	23.41	5/25 10 AM	MODERATE	8TH
SMYRNA	FLAT	6.0	6.00	5/25 2 PM	MINOR	22ND
LOWELL	GRAND	15.0	17.17	5/26 7 AM	MINOR	13TH
HASTINGS	THORNAPPLE	7.0	9.74	5/25 8 AM	MODERATE	3RD
CALEDONIA	THORNAPPLE	10.0	11.23	5/26 11 AM	MINOR	3RD
ADA	GRAND	20.0	21.56	5/26 3 PM	MINOR	2ND
COMSTOCK PARK	GRAND	12.0	16.60	5/27 8 AM	MAJOR	4TH
GRAND RAPIDS	GRAND	18.0	19.54	5/27 2 PM	MINOR	7TH
ROBINSON TWP	GRAND	13.3	16.20	5/28 4 PM	MODERATE	2ND
NEWAYGO	MUSKEGON	11.0	12.49	5/24 4 PM	MINOR	6TH
FENNVILLE	KALAMAZOO	12.0	12.20	5/28 8 AM	MINOR	23RD

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May Precipitation

May was a very wet month. We had several frontal boundaries stall over our HSA during the month of May which resulted in repeated bouts of thunderstorms producing heavy rain over the same areas. May precipitation totals at first order and contract stations across our HSA were well above normal. Monthly precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 9.29, 10.44, and 9.59 inches, respectively. Precipitation for the month at these three sites were 5.94 inches above normal at Grand Rapids, 7.73 inches above normal at Lansing, and 6.64 inches above normal at Muskegon, Michigan. For Grand Rapids, it was the 3rd wettest May on record, Lansing and Muskegon both set new records, with this May becoming the wettest on record. For the year, precipitation totals at Grand Rapids were 6.21 inches above normal, at Lansing 4.74 inches above normal, and Muskegon 6.07 inches above normal.

Snowfall for the month of May was a Trace at Grand Rapids and Lansing, with none reported at Muskegon.

May Temperatures

Temperatures for the month of May were above normal at Grand Rapids, Lansing, and Muskegon, averaging 1.6, 1.1, and 1.0 degrees above normal, respectively.

May River Levels

River levels were high throughout the month due to above normal precipitation. As a result, many rivers rose out of their banks and significant flooding occurred. By the end of the month rivers across our HSA were still running well above normal flows (two to six times' normal flow). The end of the month percentage of normal flow for selected rivers is listed below:

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	247
Whitehall	White	250
Evart	Muskegon	265
Mt. Pleasant	Chippewa	288
Lansing	Grand	353
Grand Rapids	Grand	540
East Lansing	Red Cedar	407
Hastings	Thornapple	628
Battle Creek	Battle Creek	470
Comstock	Kalamazoo	256

Hydrologic Products issued this month:

- 2 Hydrologic Outlooks (ARBESFGRR) were issued.
- 9 Flood Watches (ARBFFAGRR) were issued.
- 23 Flood Warnings (ARBFLWGRR) were issued.
- 120 Flood Statements (ARBFLSGRR) were issued
- 63 Hydrologic Statements (ARBRVSGRR) were issued.
- 31 Hydrologic Summary's (ARBRVAGRR) were issued.
- 31 Daily River and Lake Summary's (ARBRVDGRR) were issued

cc:

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